Remarks/Arguments

In an Office Action dated October 17, 2006, claims 1-7 and 10-14 were allowed; claims 23-28 were objected to; claims 20-22, 31, 35, 39 and 42 were rejected under § 102 over Opsasnick; and claims 32-34, 36, 40, 41, 43 and 45 were rejected under § 103 over Opsasnick in view of Bartow. Applicants submit that the claims are allowable.

§ 102 Rejections

Claims 20-22, 31, 35, 39 and 42 were rejected under § 102 over Opsasnick. Applicants respectfully traverse the rejections.

General Comments

Prior to addressing the rejection, a brief review of the system 110 of Opsasnick is considered helpful. Applicants first note that the system 110 is a bridge or gateway between two different networks, ATM and Ethernet in the disclosed embodiment. It is not a switch. Further Applicants note that ports 114 and 118 are on the same unit, the system 110. The port 114 is connected to Ethernet segment 122 through a MAC 140. Port 118 is connected to the ATM network 126 through an ATM switch 144. Thus everything between the two networks 122 and 126 is the system 110 disclosed in Opsasnick. Therefore Opsasnick does not even disclose two interconnected switches. It just discloses the operations of a single bridge between two networks. All of the operations, devices, modules and flows disclosed in Opsasnick thus relate to internal flows between the two external ports of the Opsasnick device.

Applicants provide this preamble to aid in the following remarks, as much of the remarks relate to improper correspondence between claimed elements and items cited in Opsasnick as the Office Action has taken the block diagrams of the single unit of Opsasnick and equated the referred blocks to distinct network elements.

Claim 20

The Office Action first equates the MAC 140 in Figure 1 to a first switch and the ATM switch 144 to the second switch. As noted above, this correspondence is improper

because a MAC 140 is not a switch and because both are contained inside the same item, the bridge of Opsasnick. They are not two separate switches as required in claim 20.

The Office Action next equates the data flows 160 internal to the Opsasnick system to be the plurality of links required in claim 20. It is first submitted that flows are logical items, not physical links between two network switches as required in claim 20. Each of the flows 160I.n or 160E.n in Opsasnick is processed by a processing channel 134.x. The channel 134.x also cannot correspond to the links in a network. This is corroborated as Opsasnick indicates the entire port interface can be a single programmable processor. Thus it could be just one physical item. Therefore Opsasnick does not show the plurality of links coupling the two switches.

Claim 20 next requires a group including selected ones of the links. The Office Action merely generally references again the internal flows 160I.n of Figure 2. The Office Action does not indicate anywhere in Opsasnick where the individual flows are treated as part of group as required by the claim element. Thus a required item is not addressed in the Office Action.

The Office Action next cites Opsasnick column 8, lines 17-28 as equating to the plurality of first and second ports element of claim 20. Applicants first submit that if Opsasnick had multiple ports 114, it would have multiple MACs 140, each connected to a separate Ethernet segment. Thus the required second ports coupled to the second switch would not be present. Applicants submit that the same would likely be true on the port 118 side, though Opsasnick is silent on the point.

Applicants next note that the first and second ports element of claim 20 further requires: "each of the selected ones of the links having a pair of ends coupled to corresponding ones of the first ports and the second ports." The Office Action does not address this requirement of claim 20; merely stopping at indicating there may be a plurality of ports 114 and 118. There is no suggestion in Opsasnick that even the flows 160, which as noted above do not properly correspond to links, could meet this requirement.

The final element of claim 20 requires a pair of transmit and receive ports selected from one of the first and second ports, the transmit port routing frames received at the first switch across the group to the second switch. The Office Action merely states ports 114 and 118 are capable of forwarding data to further ports and references all of column 4. First, the claim element specifically requires routing the frames from the first switch to the second switch. The Office Action statement about ports 114 and 118 being capable of forwarding to further ports is inapposite. The claim requires transmission between the two switches, not forwarded to some other point. And, if the argument is not inapposite, then it is fatally flawed as it has the transmit and receive directions totally reversed from all of the other elements defined previously in the Office Action. The reference to column 4 is also inapposite. Column 4 simply defines many of the elements of Figure 1 and describes the flows very generally.

The element specifically requires the transmit port to route frames across the group. The Office Action did not identify any specific element in Opsasnick to correspond, nor could it, not having corresponded anything to the required group. Applicants submit that the circuits 150 and 154 could not properly correspond as they are not part of the port 114 or 118. So the only elements in Opsasnick that might have some routing capability in Opsasnick, assuming arguendo that the flows or channels could be considered to be the required links, which Applicants submit is improper, are not part of the ports, a requirement in the claim. Column 8, lines 17-28, relied on by the Office Action for teaching multiple ports, teaches one block 150 reordering for all the ports 118, thus clearly indicating the circuits 150 and 154 are not part of the ports.

Applicants submit that Opsasnick is improperly applied in the first place, not having the required first and second switches or links, and that numerous further elements are missing when specifics of the various ports on the switches are further defined in the claim. Withdrawal of the rejection is proper.

Claim 21

The Office Action equates the egress port queues 210 to the first queuing logic. Applicants submit this is improper. The claim specifically requires that the queuing logic

enables frames to be routed through the transmit port and across the group. Thus the claim requires the order to be queuing logic, transmit port and group. But in Opsasnick the queues 210 are in the block 150 and are between the port 114 and the channels 134 or flows 160I. Thus, even if the channels 134 or flows 160I did correspond to the links, the queues 210 could not allow frames to be routed through the port 114 to the channel 134 as they are after the port 114. This problem is inherent in the correspondence defined by the Office Action as Opsasnick is dealing with internal design and when the claim adds this queuing logic element it cannot be properly equated to Opsasnick because of the internal versus external error. The rejection is improper and must be withdrawn.

Claim 22

Claim 22 is improperly rejected for effectively the same reason as claim 21, namely the queues in Opsasnick cannot be placed in the order required in the claim due to the basic internal versus external correspondence errors made by the Office Action. As a result, the rejection of claim 22 is also improper.

Claim 31

The arguments relating to claim 20 generally relate to claim 31 and are not repeated here. Claim 31 further requires "transmitting the queued frames from the plurality of first ports to the plurality of second ports so that the frames are received at the plurality of second ports in order as received at the first switch." The Office Action cites the Abstract, column 4, lines 40-47 and column 4, lines 59-63 in support of the rejection. The Abstract states: "Different frames received on a first port are processed by different processing channels in parallel. The processed frames are transmitted to a second port in the same order in which they were received on the first port." Thus the Abstract only says "transmitted to a second port in the same order they were received on the first port." The claim requires transmitted so that the frames are received at the second port in order as received at the first switch. Thus the Abstract only says transmitted in order to the second port, not that the second port will receive them in the same order as the first port. Thus the Abstract of Opsasnick is no different than Wyatt, the prior reference which has

been withdrawn and had been admitted as not teaching this requirement, which had packets transmitted to the destination in the order they were received.

Column 4, lines 40-47 is unrelated upon close review. The claim requires "transmitted . . . so that the frames are received . . . in order." Column 4, lines 40-47 do not discuss being transmitted so that the frames are received in order but instead requires circuits 150 or 154 to perform reordering before delivery to the port because of the differences in the channels 134 and the fact that the frames are provided to the channels in order but may be delayed by the channels. Additionally the circuits 150 and 154 are well after the frames have been transmitted from the port 114 or 118, the circuits coming after the channel processing, so they cannot form part of a mechanism for transmitting fames so that they are received in order as they are not part of transmitting frames, if the inverted internal analysis of Opsasnick is considered. Again Applicants note that the entire context of column 4, lines 40-47 is improper as it relates to internal flows inside a device, not external transmission over links between devices.

Column 4, lines 59-63 states "circuit 150 orders the frames so that they are transmitted on port 118 in the same order in which they were received on port 114." As in the Abstract, this is only transmitted in order, not transmitted so they are received in order as required by the claim.

Further this sentence in column 4, lines 61-63 and the Abstract evidence the entire inversion of operations done by the Office Action. They relate to receiving in order on port 114 and then transmitting in order on port 118. The Office Action, in its correspondence of the elements has effectively reversed everything from this statement, treating the correspondence between the elements as being transmitted from port 114 to being received on port 118. But this is directly opposed to the entire intent of Opsasnick. If the Office Action chooses to rely on transmission from port 114 through channels 134 or flows 160 to receipt on port 118, then the Abstract, column 4, lines 40-47 and column 4, lines 59-63 cannot provide support because they treat the corresponded items of Opsasnick in exactly the opposite sense and cannot be combined with the remainder of the alleged corresponding items.

Applicants submit the rejection of claim 31 is improper and must be withdrawn.

Claims 35, 39 and 42

As well as having elements in connection with claim 20, as in claim 31 each of these claims similarly requires "transmitting logic for transmitting the queued frames from said two ports over said two links so that the frames are received at said two ports of said second network device in order." As discussed with respect to claim 31, Opsasnick only discloses transmission in order, not reception in order, thus not teaching or suggesting a required claim element, in addition to the other failings of Opsasnick as discussed above.

§ 103 Rejections

Claims 32, 36, 40, and 43 were rejected under § 103 over Opsasnick in view of Bartow. Applicants respectfully traverse the rejections.

Claims 32, 36, 40 and 43

These claims require determining skew values for the plurality of links and then transmitting the frames using the determined skew values to control the timing of the transmission of the frames. The Office Action cites Bartow, Abstract; column 3, lines 22-31 and column 14, lines 12-46. Applicants traverse both the combination of the references and the correspondence with Bartow.

The stated reason for the combination does not meet the statutory requirements. It is clearly a hindsight analysis. It merely states that the optical environment of Bartow may be employed within the environment of Opsasnick. First, Applicants dispute this assumption. Opsasnick relates entirely to the operation within a single device. There is no teaching or suggestion that the inter-device optical environment of Bartow is even relevant or applicable to the internal operation of Opsasnick. Second, Opsasnick specifically uses queues in blocks 150 and 154 to handle ordering issues, thus teaching away from solutions such as Bartow. Further, one could not reliably measure skews in Opsasnick. The delays in Opsasnick relate to processing delays in the various channels or flows. These are not repeatable and clearly are not fixed like the skew values determined in Bartow. Thus Opsasnick not only teaches an alternative solution to Bartow, it specifically could not be modified to use Bartow. Third, merely saying something may be employed is not the suggestion of combination required by the statute.

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It is a purely hindsight statement. Therefore the combination of the two references is improper.

Further, the Abstract, column 3 and column 14 citations of Bartow do not teach the claim element of using the determined skew values to control timing of the transmission of frames. Bartow does measure skew between the links, but only to select links having a skew below a predetermined limit to be included in the group. See column 6, lines 45-51 where the skew cannot exceed set limits and to ensure that frames are properly identified to a common frame group. Refer also to column 12, line 65 to column 13, line 5, where the slave determines which transceivers are within the maximum skew and thus can be part of the link. The flowchart of Figure 8 further confirms this because any frame exceeding the skew value is treated as a signal error in step 808. Thus the determined skew value is not used to control timing of transmission of frames as required in the claims but rather to select links for the group or to indicate an error if a full set of frames has not been received. Thus Bartow does not teach or suggest a required limitation, even if improperly combined with Opsasnick, so that claims 32, 36, 40 and 43 are allowable.

<div align="center"><u>CONCLUSION</u></div>

Based on the above remarks Applicants respectfully submit that all of the present claims are allowable. Reconsideration is respectfully requested.

<div align="center">Respectfully submitted,</div>

<u>January 11, 2007</u>   <u>/Keith Lutsch/</u>
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